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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,882	10/21/2005	Kazutomi Yamamoto	MOR-263-A	1031

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TROY, MI 48084

EXAMINER

VELASQUEZ, VANESSA T

ART UNIT	PAPER NUMBER
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1793

NOTIFICATION DATE	DELIVERY MODE
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03/26/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@youngbasile.com
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Office Action Summary	Application No. 10/553,882	Applicant(s) YAMAMOTO, KAZUTOMI	
	Examiner Vanessa Velasquez	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>Oct. 21, 2005; Dec. 19, 2005; Jan. 30, 2006; Apr. 21, 2006; June 11, 2007.</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Application

Claims 1-6 are pending and presented for examination.

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy of Application No. 2003-155450, filed in Japan, has been placed of record in the file.

Information Disclosure Statement

2. Five (5) information disclosure statements (IDS) were filed on Oct. 21, 2005; Dec. 19, 2005; Jan. 30, 2006; Apr. 21, 2006; and June 11, 2007. The submissions are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements are being considered by the examiner.

Regarding the IDS filed Oct. 21, 2005, Document JP 53-022843 was not considered because neither a translation nor concise explanation of said document in the English language was provided. (MPEP § 609.04(a))

Still regarding the IDS filed Oct. 21, 2005, Applicant is reminded that it is improper to cite search reports in information disclosure statements. The search report cited therein has not been considered.

Regarding the IDS filed Jan. 30, 2006, the citation information for the International Preliminary Report on Patentability (IPRP) is incomplete. While it is understood that the IPRP is of the instant application, citations should include document numbers properly identifying the reference to be considered.

Regarding the IDS filed June 11, 2007, document "100 03 970" was not considered because a copy of said document has not been submitted.

Still regarding the IDS filed June 11, 2007, the citation information for the Office Action issued by the German Patent Office is incomplete. While it is understood that the Action is for the instant application, citations should include document numbers properly identifying the reference to be considered.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colley (US 3,542,607) in view of Callister, Jr. (*Materials Science and Engineering, An Introduction*, pp. 174-175, 180-184).

Regarding Claim 1, US '607 teaches that ultrasonic treatment enhances the superplasticity of metals (US '607, Abstract; Col. 1, Lines 34-37).

US '607 fails to teach the heat treatment step. Callister, however, teaches that annealing metals to one-third to one-half of their absolute melting temperature influences the grain size – and, therefore, tensile strength and ductility -- of the material (Callister, Figure 7.20 and text, p. 183). Furthermore, the grain size may be modified so as to impart certain mechanical properties to a metal. For instance, finer grains produce stronger materials, as is illustrated by the Hall-Petch relationship (Callister, p. 175). Thus, it would be obvious to one of ordinary skill in the art to append the heat treatment step taught by Callister to the ultrasonic treatment of US '607 because such a process would yield a superplastic material with enhanced ductility and/or strength, depending on the extent of recrystallization.

Regarding Claim 4, the recrystallization temperature is defined as being approximately between one-third to one-half of the absolute melting temperature of a metal (Callister, p. 183).

6. Claims 2, 3, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colley (US 3,542,607) in view of Callister, Jr. (*Materials Science and Engineering*,

An Introduction, pp. 174-175, 180-184), and further in view of Lim et al. (US 5,614,684), with evidence from Metals Handbook (ASM International, Vol. 2, 9th ed.).

Regarding Claims 2 and 3, US '607 in view of Callister fail to apply the ultrasonic-heat treatment process specifically to pure magnesium or magnesium alloys. US '684, however, teaches that imparting superplastic properties to magnesium alloys is highly desirable because their strength, weight, and workability make them suitable for use in the transportation and aerospace industries (US '684, Col. 1, Lines 14-37). Thus, it would be obvious to one of ordinary skill in the art at the time of the invention to apply the process taught by US '607 in view of Callister to magnesium alloys because of the numerous applications of superplastic magnesium as previously discussed in US '684 (Col. 1, Lines 14-37).

Concerning the specific damping capacity, low-alloy magnesium has a specific damping capacity of 40% (Metals Handbook, p. 3 of printout).

Regarding Claims 5 and 6, the recrystallization temperature is defined as being approximately between one-third to one-half of the absolute melting temperature of a metal (Callister, p. 183).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vanessa Velasquez whose telephone number is (571)270-3587. The examiner can normally be reached on Monday-Friday 8:30 AM-6:00 PM ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached at 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art
Unit 1793

/Vanessa Velasquez/
Examiner, Art Unit 1793